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March 16, 2017

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

**RE: Supplemental Comments of the Minnesota Department of Commerce, Division
of Energy Resources**
Docket No. ET10/RP-16-509

Dear Mr. Wolf:

Attached are the supplemental comments of the Minnesota Department of Commerce,
Division of Energy Resources (DOC or the Department) in the following matter:

The 2017-2031 Resource Plan of Missouri Basin Municipal Power Agency (d/b/a
Missouri River Energy Services (MRES)).

The Department continues to recommend that the Minnesota Public Utilities Commission
(Commission) accept MRES's resource plan. The Department's team of Chris Davis, Laura
Otis, Susan Peirce, Steve Rakow and Michael Zajicek is available to answer any questions
the Commission may have.

Sincerely,

/s/ CHRISTOPHER T. DAVIS
Analyst Coordinator

CTD/lt
Attachment

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

SUPPLEMENTAL COMMENTS OF THE
MINNESOTA DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

DOCKET No. ET10/RP-16-509

I. INTRODUCTION

A. OVERVIEW OF THE FILING

Minnesota Rules part 7843 require electric utilities to file proposed integrated resource plans (IRP) every two years. The Missouri Basin Municipal Power Agency d/b/a Missouri River Energy Services' (MRES or the Agency) most recent IRP in Docket No. ET10/RP-10-735, MRES's fifth IRP, was accepted by the Minnesota Public Utilities Commission (Commission) on February 21, 2012. Order Point 8 of the Commission's February 21, 2012 Order stated:

MRES shall file a status update on its demand-side management and distributed generation efforts, as well as a report updating the Commission on the effect of federal environmental regulations on MRES, by July 1, 2014.

On June 23, 2014, MRES submitted both an IRP Status Update and an Environmental Matrix concerning federal environmental regulations.

On July 1, 2016, MRES filed its sixth IRP.

On December 1, 2016, the Department submitted its initial comments on MRES's IRP. The Department requested that MRES provide the following information in its reply comments:

- An updated analysis of wind and solar additions by modeling all costs for generic wind and solar units as a single, per MWh charge; with a goal of determining the price per MWh at which additions of wind and solar capacity are least cost for MRES's system;

- An explanation for why the historical energy savings shown in Table 3-2 of MRES's IRP differ from the MRES energy savings shown in the Department's Electric Savings Program;
- the projected lifetime energy savings and lifetime \$/kWh for each year of MRES's IRP;
- the Agency's historical incremental energy savings as a percent of wholesale sales, both for Minnesota only sales and for total system-wide sales;
- a description of the Agency's contingency plan in the event that MRES is unable to achieve the larger level of energy savings specified in its Total Base Case scenario;
- a description (including amounts and locations) of the additional load added to its system since 2005; and
- an analysis that compares 2005 statewide power sector carbon dioxide emissions (total annual emissions of carbon dioxide from MRES's generation of electricity within Minnesota and all emissions of carbon dioxide from the generation of electricity imported from outside the state and consumed by MRES's customers in Minnesota) with projected statewide power sector carbon dioxide emissions over the length of the planning period assuming both Total Base Case and Expected Conservation achievement scenarios.

The Department's recommendations included:

1. Energy and Demand Forecasting

a. Short-Term Energy Forecast

The Department recommends that the Commission accept the MRES short-term energy forecast as filed.

b. Short-Term Demand Forecast

The Department recommends that the Commission accept MRES's short-term demand forecast for planning purposes. Also, the Department recommends that the Commission advise MRES to construct and file a regression model of demand for its Minnesota members within six months of the Commission Order in this proceeding.

2. *Modeling and Supply-side Recommendations*

The Department recommends the Commission advise MRES to consider:

- a. additional conservation achievement under a variety of contingencies, similar to how supply units are studied;
- b. modeling a greater number of contingencies, including modeling price contingencies for all resources options that are presented to the Agency's IRP model;
- c. making generic units with varying characteristics available in different years if it would aid in the Agency's modeling;
- d. consider ways to further limit the Agency's exposure to spot market prices;
- e. modeling all costs for generic wind and solar units as a single, per MWh charge; and
- f. reconsider the Agency's analysis of wind and solar additions with a goal of determining the price per MWh at which additions of wind and solar capacity are least cost for MRES's system.

3. *DSM Resources*

The Department recommends that the Commission advise MRES to continue to strive to meet the energy savings of the Total Savings Base case.

On February 28, 2017, MRES submitted its Reply Comments.

II. **MRES REPLY COMMENTS**

MRES divided its Reply Comments into two sections. The first section provided additional information about the Agency's demand-side management (DSM) achievements, goals and cost-effectiveness. This section also included a discussion of its movement towards meeting Minnesota's greenhouse gas reduction goals. The second section provided MRES's response to the Department's recommendations in its December 1, 2016 initial comments. Each of these sections are discussed briefly below.

A. *MRES ADDITIONAL INFORMATION*

1. *DSM*

Beginning on page 8 of its Reply Comments, MRES provided additional DSM information and discussion requested by the Department. Specifically, MRES responded to the following four requests:

- a. Please explain why the historical energy savings shown in Table 3-2 of the Petition differ from the MRES energy savings shown in the Department's Electric Savings Program.
- b. Please include the projected lifetime energy savings and lifetime \$/kWh for each year of MRES's IRP.
- c. Please present the Agency's historical incremental energy savings as a percent of wholesale sales, both for Minnesota only sales and for total system-wide sales.
- d. Please describe the Agency's contingency plan in the event that MRES is unable to achieve the larger level of energy savings specified in its Total Base Case scenario.

The Department appreciates MRES's comprehensive responses to the Department's requests. The Department recommends that MRES include similar detail in its next IRP because it helps provide parties and the Commission a more complete picture of the Agency's DSM achievements and goals. The Department would be happy to discuss this issue further with MRES before its next IRP filing.

2. *Greenhouse Gases*

On page 13 of its Reply Comments, MRES provided additional greenhouse gas (GHG) information and discussion requested by the Department. Specifically, MRES responded to the following two requests:

- The Department recommends that MRES describe (including amounts and locations) of the additional load added to its system since 2005.
- The Department recommends that the Agency provide an analysis that compares 2005 statewide power sector carbon dioxide emissions (total annual emissions of carbon dioxide from MRES's generation of electricity within Minnesota and all emissions of carbon dioxide from the generation of electricity imported from outside the state and consumed by MRES's customers in Minnesota) with projected statewide power sector carbon dioxide emissions over the length of the

planning period, assuming both Total Base Case and Expected Conservation achievement scenarios.

Each of MRES's responses are discussed below.

a. MRES Additional Load

As MRES explained, MRES has 130 MW of new load that switched from other Minnesota wholesale suppliers to MRES recently. Specifically, MRES states:

Since 2005 (the baseline year for measuring the GHG goals), four new Members joined MRES, and MRES began supplying Marshall's entire supplemental load (when its prior contract with another supplier for part of its supplemental needs expired), an existing Member community. These additions represent pre-existing electric load served by other wholesale sources. Thus, more than 130 MW of "growth" is not due to greater Member electric consumption but, instead, a result of communities joining MRES to provide their long-term wholesale power supply and other energy services in a more economical and environmentally sensitive manner.

The additional information provided by MRES provides a much clearer picture of the Agency's ability to meet Minnesota's greenhouse gas reduction goal. Before the Agency's next IRP the Department will discuss with MRES the potential ways to portray changes in mass CO₂ emission rates.

b. Projected MRES CO₂ Emissions Compared to 2005

In its initial filing, MRES compared its CO₂ emission rates in 2005 with projected CO₂ emission rates. The Department asked the Agency to provide a comparison of its 2005 tons of CO₂ emitted with its tons of projected CO₂ emissions. Below the Department reproduces Table R-4 from MRES's Reply Comments.

**Table R-4
 Historical and Projected Minnesota CO₂ Emissions Levels
 MRES Base Case**

Year	MN CO ₂ Tons	MN Load MWh	MN CO ₂ Emissions lbs/MWh	MN CO ₂ Ton Reduction Since 2005	MN lbs/MWh Reduction Since 2005	MN Reduction Goal
2005	1,098,363	891,976	2,462.8			
2014	828,616	1,340,707	1,236.1	25%	50%	
2015	766,437	1,305,059	1,174.6	30%	52%	15%
2016	934,324	1,514,526	1,233.8	15%	50%	15%
2017	1,117,275	1,753,792	1,274.1	-2%	48%	15%
2018	1,092,282	1,758,368	1,242.4	1%	50%	15%
2019	972,385	1,758,472	1,105.9	11%	55%	15%
2020	996,227	1,754,409	1,135.7	9%	54%	15%
2021	975,846	1,767,053	1,104.5	11%	55%	15%
2022	968,163	1,766,704	1,096.0	12%	55%	15%
2023	974,014	1,766,779	1,102.6	11%	55%	15%
2024	943,064	1,765,116	1,068.6	14%	57%	15%
2025	959,793	1,767,463	1,086.1	13%	56%	30%
2026	980,783	1,774,627	1,105.3	11%	55%	30%
2027	949,577	1,774,312	1,070.4	14%	57%	30%
2028	967,187	1,774,963	1,089.8	12%	56%	30%
2029	986,697	1,774,842	1,111.9	10%	55%	30%
2030	960,033	1,779,457	1,079.0	13%	56%	30%
2031	1,070,857	1,800,143	1,189.7	3%	52%	30%

As can be seen, MRES's tons of CO₂ emissions declined 30 percent from 2005 levels by 2015. However, Table R-4 shows that MRES projected that its load would increase significantly in 2016 and 2017. Further, in 2031 the Agency projects that its CO₂ emissions will increase when the Company's purchase from the Point Beach nuclear plant terminates. Thus, even though MRES projects a 52 percent reduction in CO₂ emission rates by 2031, MRES only projects a 3 percent reduction in total CO₂ emissions comparing 2031 to 2005. The Department recommends that MRES include a similar table in its next IRP. The Department does not believe that including the emissions from 130 MW of load transferred

from a different wholesale supplier is a reasonable method for evaluating the Agency's progress towards meeting Minnesota's GHG reduction goals. As mentioned above, the Department will discuss this issue further with MRES before the Agency files its next IRP.

B. MRES RESPONSE TO DEPARTMENT'S INITIAL COMMENTS

In its reply comments, MRES suggested that the Commission defer or decline some of the Department's recommendations regarding forecasting and modeling. The Department briefly discusses the forecasting and modeling issues below.

1. Forecasting

The Department regards its MRES IRP comments as advisory, with the primary goal of ensuring that the Agency's action plan will provide adequate service. In some cases, MRES has asked the Department to withdraw some of its recommendations. The Department declines to withdraw recommendations, but instead recommends that the Department and MRES discuss forecasting issues at least six months before the Agency submits its next IRP.

2. Modeling

As previously noted, the Department regards its MRES IRP comments as advisory, with the primary goal of ensuring that the Agency's action plan will provide adequate service. In some cases, MRES has asked the Department to withdraw some of its recommendations. The Department declines to withdraw recommendations, but instead recommends that the Department and MRES discuss modeling issues before the Agency submits its next IRP.

One of the Department's recommendations stated:

The Department requests that MRES update its analysis of wind and solar additions by modeling all costs for generic wind and solar units as a single, per MWh charge; with a goal of determining the price per MWh at which additions of wind and solar capacity are least cost for MRES's system.

Part of MRES's response included the following:

The models constructed by MRES for this resource plan are valid for planning purposes. As reported in the IRP, the modeling concluded that \$76 was the breakeven point for wind and \$95 for solar.¹ This result shows that wind units are slightly above the price per MWh at which additions of wind capacity are least

¹ The Department notes that the present wind market is providing wind at a fraction of the wind costs cited by MRES.

cost for the MRES system, and establishes the data point for comparison purposes. This data meets the Department's goal to identify the price per MWh at which additions of wind and solar capacity are least cost for MRES.

According to Minnesota Statutes 216B.2422 Subd. 4,² the Commission is unable to approve a nonrenewable facility unless a utility has shown that a renewable energy facility is not in the public interest. The Department recommended changes to the Agency's renewable energy facility modeling to facilitate this type of showing. The Department notes that MRES's present approach, if used in a Minnesota certificate of need (CN) process, may not be sufficient to demonstrate that a renewable energy facility is not in the public interest. The Department's recommended approach makes identification of the least cost level of renewables simpler, while enabling greater flexibility in model design—if the flexibility is desired. The Department notes that the difficulty in interpreting MRES' modeling approach means that, in a CN proceeding, the Department would be likely to follow a different approach and may, as a result, arrive at a different conclusion.

III. DEPARTMENT RECOMMENDATIONS

A. RECOMMENDATIONS FOR INSTANT IRP

1. *Energy and Demand Forecasting*

a. *Short-Term Energy Forecast*

The Department recommends that the Commission accept the MRES short-term energy forecast as filed.

² Subd. 4 states:

The commission shall not approve a new or refurbished nonrenewable energy facility in an integrated resource plan or a certificate of need, pursuant to section 216B.243, nor shall the commission allow rate recovery pursuant to section 216B.16 for such a nonrenewable energy facility, unless the utility has demonstrated that a renewable energy facility is not in the public interest. The public interest determination must include whether the resource plan helps the utility achieve the greenhouse gas reduction goals under section 216H.02, the renewable energy standard under section 216B.1691, or the solar energy standard under section 216B.1691, subdivision 2f.

b. Short-Term Demand Forecast

The Department recommends that the Commission accept MRES's short-term demand forecast for planning purposes.

c. General

The Department recommends that the Agency meet with the Department within six months of the Commission Order to discuss forecasting issues raised by the Department in its initial comments.

3. DSM Resources

The Department recommends that the Commission advise MRES to continue to strive to meet the energy savings of the Total Savings Base case.

B. RECOMMENDATIONS FOR NEXT IRP

1. Energy and Demand Forecasting Issues

As noted above, and to facilitate an adequate assessment of the Agency's forecasts in its next IRP, the Department recommends that the Agency meet with the Department within six months of the Commission's Order in this docket to discuss forecasting issues raised by the Department in its initial comments.

2. Modeling and Supply-side Recommendations

The Department recommends the Company consider:

- A. additional conservation achievement under a variety of contingencies, similar to how supply units are studied;
- B. modeling a greater number of contingencies, including modeling price contingencies for all resources options that are presented to the Agency's IRP model;
- C. making generic units with varying characteristics available in different years if it would aid in the Agency's modeling;
- D. consider ways to further limit the Agency's exposure to spot market prices;
- E. modeling all costs for generic wind and solar units as a single, per MWh charge; and
- F. reconsider the Agency's analysis of wind and solar additions with a goal of determining the price per MWh at which additions of wind and solar capacity are least cost for MRES's system.

C. RECOMMENDATIONS FOR PREPARING FOR A CERTIFICATE OF NEED

The Department recommends that MRES update its analysis of wind and solar additions by modeling all costs for generic wind and solar units as a single, per MWh charge; with a goal of determining the price per MWh at which additions of wind and solar capacity are least cost for MRES's system.

/lt

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**Minnesota Department of Commerce
Supplemental Comments**

Docket No. ET10/RP-16-509

Dated this 16th day of March 2017

/s/Sharon Ferguson

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